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Iowa State Agricultural College

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LITERARY.

THE PURITAN IN AMERICAN CIVILIZA- TION.

BY R. W. OLMSTED.

THE analysis of structure offers to all classes
of students a boundless field for investiga-
tion and thought.

A short time ago, at Plymouth, Mass., a solid
granite monument was appropriately dedicated.
Upon the octagonal pedestal stands the figure of
faith, one foot resting upon Plymouth Rock. In
the left hand is an open Bible, while the uplift-
ed hand points heavenward. From four faces
of the pedestal project buttresses, upon each of
which is a figure of heroic size representing
Morality, Education, Freedom and Law. These
figures, together with the figure of Faith on the
summit, typify the principles of the original
American colonists. The inscription on the
main shaft reads: "National monument to the
forefathers, erected by a grateful people in re-
membrance of their labors, sacrifices and suffer-
ings for the cause of civil and religious liberty."

Thinking of this there arises in our minds a
picture of a yet grander structure—the grandest
the world has ever seen; a structure built up
under nature's laws—mankind the material, God
the Architect. This magnificent social struc-
ture was founded by Pilgrim Fathers, framed
by Revolutionary patriots, perfected by heroes
in a civil strife and stands to-day upon the pin-
nacle of the world's civilization. It is composed
of elements mutually supported and bound to-
gether, and these elements are represented by
the beautiful figures upon this physical struc-
ture.

In looking at our nation to-day we find our
selves occupying almost a grand division of the
earth, living happier, better, more intelligent
lives than the people of any other nation on the
globe, and, above all, enjoying permanent free-

dom. Let us therefore look for the causes of these unrestrained blessings and determine the present condition of these elements.

Our faith is not a grovelling superstitious idolatry, but with almost universal consent we have maintained a belief in christianity.

Our morals will compare favorably with those of other nations. Many nations are encumbered with the most vicious habits and practices from which we are entirely free,—especially is this true of our confidence in the sacred, purifying influences of the home.

Of our education we are justly proud. It requires but little knowledge of the educational systems of different nations to know that nowhere is the diffusion of knowledge so general as it is in our own country.

Of our freedom we boast, and why not? Where is the American who will exchange his rights and privileges for those of the Englishman, the Frenchman, or the German?

In our laws we glory. They are of us, for us and by us. We respect and obey them and so perpetuate our republican form of government.

But we observe that dangers threaten us. Our horizon is never clear. Look to that beautiful figure of Faith! Is all tranquil? Methinks she hears the clash of battle around her; hears silver tongued orators importuning the people to forsake her; hears the discordant wrangling in her own ranks.

Forming against morality we see an enemy. To both individuals and nations great prosperity has a detrimental tendency. "Our nation is ruined if we become too prosperous." Throughout all the land the great masses of our youth are neglecting the real things of life while chasing the bubble of pleasure, sometimes comparatively harmless, often ruinous. No other nation affords such ample opportunities for unprincipled ambition and avarice as does our own country.

Passing to education we are enclined to feel more confident. Let us see. Think of the tens of thousands of illiterate voters who wield the scepter of popular government in our country to-day. Many cities have enacted laws compelling the unguided youth to attend the schools; yet have you observed the difficulties besetting the practical enforcement of those laws?

Throughout the sunnier portion of our land is an awful cloud—the brilliant light of knowledge has not yet penetrated its dark folds;

moreover it is of itself inert, and worse still it is surrounded by a mighty formidable barrier of human prejudice defying progress and thus nurturing vice and contention. The question arises, shall we educate the negro and thus solve "The Southern Question" of to-day?

Freedom is bought with blood; it is the jewel of mankind, and like all jewels needs to be carefully guarded. As American people we claim to have by reason of the high degree of our general intelligence and long experience under a popular form of government, the best judgment as to what will secure the highest degree of uniform freedom to all as Nature herself would seem to ordain it. So when we see an inferior people landing on our shores, proclaiming doctrines which if accepted would annihilate every vestige of our present social organization, we should interest ourselves to counteract any influence which might be exerted by a force so destructive in its very aspect.

But a greater danger from internal sources manifests itself. In some parts of our nation it is acting constantly, in others periodically. The ballot in the hands of American citizens is a privilege and a power which in theory bows to no higher authority; and it is a force which should act with friction at a minimum, otherwise it may become so accelerated in its misapplication as to take from us the very freedom of which it is a part.

The greatest social question in our nation to-day is, "How shall we prevent the use of intoxicating liquors as a beverage?" The difficulty lies in the means to the end. High license, prohibition and laws punishing the consumer are all in a very large degree ineffective. Tales of woe, piteous appeals, rivers of blood, tons of wasted production pass before our vision. Who will come to the rescue?

In thinking of the great industrial world of to-day, we observe that its dimensions are increasing at an enormous rate; the diversification of labor is carried to an extreme. In securing an enormous production, evidences of social degradation are being manifested. Labor is not a commodity and must not be treated as such. The near future will witness a bitter agitation of questions pertaining to a revolution in industry. The outcome is uncertain.

Law is our chief cornerstone. Through it freedom of conscience was made possible; through it morality found strong support;

through it education and freedom were established, and by it they have all been maintained. Law is moulded by the other elements. If they are strong our laws will be good, if they are weak our laws will be bad.

Such being the destructive influences at work in our social structure to-day, we may ask: Are the elements of our structure, the supports of our government, sufficiently strong to withstand the pernicious effects exerted by these forces?

Let us turn back the pages of history. We read of the firing on Fort Sumter. We are awed as we see the great rent in the structure dividing it into nearly equal halves. Without noting the elements separately let us think of their combined influence at this time. The elements have now become highly developed. They have turned the eyes of the nation back upon itself. The few, mainly from sturdy New England, stand firm to their convictions. Agitation commences. It goes on and on with rapidly accelerating force. Thousands are converted in a day. Thousands see as they never have before that this is not in reality "the land of the free." Tens of thousands, aye, millions see that human slavery is one of the most firmly rooted institutions in our great commonwealth. The awful war-cloud rolls over our nation. The abolitionist cries "now or never." Lee surrenders. The nation is restored and two of the greatest questions that ever agitated the American people are forever settled. The doctrine of states rights is dead. Human slavery within our borders is no more.

Let us turn back the pages of history rapidly. George Washington inaugurated first president of the United States. The grandest code of laws upon which a government was ever founded has been adopted by thirteen states. Immediately preceding is an eight years war of inexpressible suffering. Ahead are all the uncertainties of an untried future. It is not obvious that all the elements of the structure were prominent in the public affairs at those times of deepest anxiety, which moulded the present condition of our existence?

But once more we turn back the pages of history. Dec. 21, 1620, the pilgrims landed at Plymouth Rock. It is here we must stop. It is at this shrine we must do reverence. With this persecuted people came faith sublime; with them came freedom and law inseparable; with

them came morality and education, mutually helpful and absolutely necessary to make law regnant and liberty permanent.

Methinks I see the Mayflower now lying at anchor. What a miserable solitary ship she is! What a voyage she has undergone! I see the little band landing on ice-clad Plymouth Rock. They are on a new continent surrounded by nature in her wildest forms. Before them is a long, dreary winter of untold privations and suffering. Settling down upon them is famine, disease and death, but they shrink not. What a noble sacrifice for principle! History furnishes no parallel of such sublime devotion to a conception of truth.

Again, I see a nation building upon their virtues. I see the influence of their lives upon four million patriotic colonists struggling to establish a government on a sound basis.

Another picture, and we are upon the most dreadful of all scenes—civil war. Yet behind this outward show of dire calamity I see the virtues of a parent stock purifying society and government and lifting humanity to a higher plane of action.

To-day I see these mighty forces disseminated throughout millions of our people from lake to gulf, from ocean to ocean. They are speaking to us in poetry and song; from the pulpit and the press; through the author and legislator. In them we have trusted; in them we trust.

THE PURITAN AND CAVALIER.

BY S. W. NAYLOR, Topeka, Kan.

[Awarded First Price at Inter-state Contest]

THE Puritan and the Cavalier colliding formed modern England; uniting established our republic. The Cavalier sprang from chivalry, the flower of feudalism, a chivalry fostered by caste and maintained by princes. He defended the king against usurpation of power by party or sect; he upheld the royal prerogative. The Puritan was born of freedom of thought and action. His awakened conscience revolted against the power of caste in church and state; he combined religious independence with civil liberty. Law incarnate in royalty was the embodiment of cavalierism; law and liberty the basis of puritanism.

While the Cavalier was reinstating the monarchy overthrown by Cromwell, the Puritan was founding our republic. Subsequently, however,

the Cavalier imprinted his vigor and statesmanship upon our constitution and declaration of rights. His lofty principles of liberty were accompanied by irrepressible buoyance and knightly gallantry. "He knew how to live gracefully, fight stoutly and die honorably." With austere face and uncharitable mein, Puritan of New England stands upon the canvas of history a sombre, ungraceful figure, void of the delicate colorings of gentleness and forms of politeness. His character was an example of simple, rugged, but genuine manhood. His doctrine read, "Faith in God, faith in man, faith in works"—a creed ample for this life and that which is to come. Threatened by a common enemy, the chivalrous Cavalier of Virginia stood side by side with the stalwart Puritan of New England; Washington, Jefferson, Lee and Patrick Henry; Hancock, Green, Putnam, and Adams. Such were the characters—refined by the Roman, the French and the Norman; tempered by the Angle, the Saxon and the Briton—that established our republic.

Pointing to the revolutionary soldier, the world exclaimed, "An American!" But no, the American was not yet. The Puritan and the Cavalier by the issue of the revolution were not amalgamated. Adhering to hereditary traits and inclinations they effected distinctive developments. The Cavalier founded his civilization upon caste. With him property was for the few, education for the few, labor for the negro. Slavery dulled the conscience, impoverished the masses, and made a feudal despot of every planter. The Puritan, attracted to a climate congenial to his sterling energies, founded his civilization upon the cottage home. Follow him through the sturdy commonwealths permeated by his spirit of progress; see the foundries, factories, churches, colleges and common schools—the monuments of material development and intellectual freedom. The south, Virginia branded with the mark of retrogression; the north, Massachusetts stamped with the elements of progress. Caste, sovereignty and bonded labor produced Hayne and Calhoun; the excessive animus of slavery brought forth Quantrell's band, the Yonker Brothers, and John Wilkes Booth. Free labor and free thought developed Garrison, Phillips and—will you deny it?—John Brown, who, his great soul bursting with sympathy for the bondmen, dared a nation, and

fell—traitor or patriot—a martyr to his convictions.

Politically the Puritan and the Cavalier were intensely partisan, opposed the one to the other. It was well; opposition and antagonism underlie progress; we recognize greatness by comparison. Superiority is worthy of pride in the degree that rivals are mutually worthy of respect. It matters very little which party dominates, but which achieves the greatest good. The inherent tendencies of the north and south produced from the beginning different interpretations of the constitution. Individuality developed; interest widened; thought diverged; opinion ripened into argument, which culminated into the matchless debate of 1830. With all the elegance of rhetoric and an adroitness worthy of a more righteous cause, Robert Hayne then set forth the precepts of southern chivalry, state rights and caste sovereignty—the mutterings of the great rebellion. The reply comes like a thunderbolt. Daniel Webster, with loftier genius, more convincing logic and a holier cause, addresses a senate while a nation listens. The occasion grows upon him. His great arm rises and falls with the deep cadence of his voice. His ponderous sentences well up from the full fountain of federal unity. He strips from iniquity the splendid garb of chivalry and shatters the fallacies of state rights. Then clank the shackles of four million slaves; then freedom's shout rings round the world; then the solemn vow of the great north goes thundering up to heaven. "This Union shall be preserved."

Partisanship had now become sectionalism; under the former a republic is capable of the highest development; under the latter there remains but a step of disunion. In the light of history the question is not "Why should there have been war?" but "How was war so long averted?" The north and the south, fortified alike by logic and eloquence, would make no concession, accept no compromise. War was the only arbiter. It confirmed the principles of the Puritan, revolutionized the civilization of the Cavalier, and vindicated once for all our free institutions. And, more, it broke down partition walls; it facilitated communication between the north and the south; it unified commercial interests. It smoothed the way for northern industry and individuality to permeate the south and for genial temperament and warm hearted hospitality of the south to enter north-

ern society. It softened prejudices; it quickened the pulse of civilization; it enlightened. It was good. The civil war was the consecration of our republic. For it cut the nerves of sectionalism and bound the north and south together with cords of peace. It made possible the ultimate fusion of the Puritan and the Cavalier tendencies. These the full-rounded American character must embody. For a national character must be resultant of those energies within the nation which are dominant and representative. The American character has not yet come to the citizen masses, but the type has appeared. It is found in him—Cavalier by birth, a Puritan by education—at whose sudden taking off strong men wept like children and the national pulse stood. Yes, “From the union of the Puritan and Cavalier, slow perfecting through a century, from the straightening of their purposes and crossing of their blood came one who stands as the first typical American, who first comprehended within himself all the strength and gentleness, all the majesty and grace of this republic—Abraham Lincoln. He was greater than Puritan, greater than Cavalier. For in his ardent nature were fused the virtues of both, and in the depths of his great soul the faults of both were lost.” In his type, the ideal, we may conceive the real.

The prestige which the espoused principles of a nation have in the world's progress is of vital significance in the estimation of national life. To a political, religious and social world ruled by caste and sect, the declaration that all men were created equal was a glittering absurdity. The discovery of the paradox therein contained has revolutionized the world and shaped the progress of the nineteenth century. The spirit of western liberty breathes upon France and the French revolution prepares the way for the republic. The cry of “Liberty and Equality” nerves the sinewy frame of the slave of San Domingo; he springs into full stature of a man and gives the commonwealth an impetus toward the Haytain republic. Democracies rise in Mexico, in South America, in Africa and in the islands of the sea. Greece throws off the yoke of Ottoman despotism, and limits the imperial power. The wonder of to-day is Brazil, transformed in a night. Portugal waves between caste, power and equal rights. The masses of Europe, throbbing with the pulsations of lib-

erty and sinews hardening and knotting for the struggle.

Wait for the dawn of a brighter day.

To snap the chain the moment when they may.

The world voices the one experimental assertion, now practically a demonstrated truth, all men are created equal—not in natural abilities, but in the inalienable rights of life, liberty, and the pursuits of happiness.

Superior to the revolutionary is the formative element in civilization. Frenzy and fanaticism may rebel and overthrow as Robespierre in the French revolution; but sagacity and statesmanship create and reform as the Puritan and Cavalier, immortalizing their formative forces in the development of the United States. To this development the energies of both have contributed. The Puritan has been the tower of strength; the cavalier element when antagonistic, like friction in an electrical machine, has resisted and seemingly hindered but all the while power was being accumulated. The influence of the Cavalier may be less prominent on the formation of our republic, but because two parts of hydrogen unite with one of oxygen to form water, so oxygen, therefore, unnecessary? Our institutions are so deeply rooted in the perpetual that two centuries of unrestricted immigration have not perceptibly changed them. They appeal to the noblest qualities in all nationalities; immigrants assimilate with the type most congenial. Aided, therefore, from whatever sources, the energies of both Puritan and Cavalier will continue to be the vital forces in our national life. With such inherent energies stimulating its very fibre, public sentiment is not content merely to preserve, but seek reformation and perfection in continued development. One by one the elements discordant with perfect national unity are eliminated. Significant is the sorrow at the untimely death of Georgia's son. The head lines read, “Henry W. Grady Dead,” but back of the candid, loyal-hearted brother the north sees the New South. The New South, pausing over the grave of her brilliant, devoted son, beholds her resources, her possibilities, her privileges and duties—herself, as an important factor of our nation. The New South is wiser than the Old. She is discriminating as regards her highest good. The inspiration of northern industry courses through her veins. The hum of factories and whirr of ma-

chinery rise like a New England hymn. "There was a south of slavery and secession; that south is dead. There is a south of union and freedom; that south is living, breathing, growing every hour." North and south, universal education is elevating the masses; the dignity of labor is becoming more prevalent, loyalty and patriotism, which hold neither section in suspicion and estrangement, are supplanting intolerance. The result is inevitable.

What of the republic? The energies and virtues of the Puritan and the Cavalier are not dead. Dead! They are but straightened and strengthened by years of exertion and antagonism. They are wove and knit in the same fabric of our commonwealth. They permeate all the secret bonds of society; throb in every pulse of our national life, charging it with the tremendous meaning of an ideal republic. We, as a people, standing on the vantage ground of incomparable achievements, can not but recognize that man in society, conscience in religion, strength and dignity in government, and the eternal permanence of individuality, emanated from the Puritan and the Cavalier; and that public opinion, conserving the wisdom and heeding the experience of the past, now moves forward in the path of reform, conscious that our national life must be perfected by interior development and progress.

SCIENTIFIC.

THE NEW MANUAL OF BOTANY.

BY L. H. PAMMEL.

The first edition of this popular work appeared in 1848, early in Dr. Gray's botanical career. At different periods of his life it became necessary for him to revise the work. He had also intended to revise this edition, but his death in 1887 prevented its completion. The work has, however, been left in good hands, as the book shows. Not only is the typography excellent but it is an excellent book for those who desire to become familiar with our flora. The descriptions are shorter than in the last edition, in closely related species prominent characters and are printed in italics, which adds much to its value as a book for students.

It can be said for the authors of this work that they are thoroughly familiar with the flora they

have described, it is therefore more than a compilation. The work embodies a great deal of research. The new manual embraces the flora as far west as the 100th meridian, where it meets Coulter's Rocky Mountain Botany. This, with Botany of California and Chapman's Flora of the Southern states will now enable students to identify most of the plants growing in the United States.

Comparing this manual with the last edition many changes are noticed. The eastern botanist will find many new names, such as Buffalo Grass (*Buchlæ dactyloides*), of the western plains; *Engelmannia pinnatifida* and *Berlandiera Texana* which occur in the southwest. The common Rocky Mountain *Claytonia Chamissonis* occurs in eastern Minnesota. The Spiny Nightshade (*Solanum rostratum*) is an excellent example of how a worthless native of the west has established itself east of the Mississippi and becoming troublesome. The Coneflower (*Rudbeckia hirta*) has also become a common weed in eastern meadows. Another western plant, *Euphorbia marginata*, now largely cultivated for ornament has established itself in certain localities in the east.

European weeds are still coming in. The Manual gives: The Clover Dodder (*Cuscuta Epithymum*). Should this parasitic weed spread it will prove a serious thing to the farmers of this country. We cannot in this place refer to other interesting cases of the distribution of plants. From a table we glean the following interesting facts: Of the described Phænogams 2651 are native, 404 are introduced. Including the Hepaticæ or Liverworts which have been added to this volume the total number of plants growing in the region embraced by the manual is represented by 963 genera and 3298 species. Some introduced plants are omitted. We will only mention one, which is not uncommon in the bottoms near St. Louis, Missouri, Balloon Vine (*Cardiospermum, Halicabum*).

The revisers, Dr. Sereno Watson, Curator of the Gray Herbarium, Harvard University, and Prof. J. M. Coulter, of Wabash College have done a good service for teachers. This book will long remain the best manual of our flora. They have followed so far as they were able the views of Dr. Gary. His judgment on plants of our country is as expressed in his various writings and is worth more than that of any other man because his whole life was spent in a study of our flora. The conservatism shown in nomenclature and the arrangements of certain parts do not meet

the approval of some botanists. It would be presumptuous for me to give an opinion as to the correctness of the methods adopted, but I will say the arrangement and nomenclature is that best suited for the purpose the book is to serve, a manual for schools and colleges.

* *

MISSION OF SCIENCE.

BY W. C. S.

GOVERNMENT has two main objects to secure: the suppression of crime and the promotion of industries. It is in the latter that applied science finds its plainest and most obvious line of application, and its most important field is inevitably that of mechanics.

Mechanics directs the advancement of the world in an astonishingly greater degree than does any other department of science. Every industry is largely mechanical, nearly all of the products of the labor of the world are given form to a greater or less extent by mechanism. It is applied mechanism that sows and reaps our grain, that grinds our flour, that transports it to domestic markets, carries it across the ocean to the half-fed people of Europe. It is applied mechanics that prepares our cotton for the mill, that compresses the product of acres into a bale that may be handled by a single strong man, that spins our cotton and wool, weaves them into cloth, cuts the cloth to pattern and gives the garment permanent form. Applied mechanics gives to the astronomer his telescope, enables him to calculate the elements of the planets and stars, teaches the mariner his system of navigation, gives him the ship that he thus directs and guides the engineer in his magnificent work of designing the machinery which impels the enormous structure.

The progress of science as seen in her past history resembles that of the great steamships which are now the embodiment of the most wonderful of the results of human intellect working through the scientific application of mechanics which to-day marks the advance post of civilization. In the building of the steamer long weeks are spent in the preparation of plans, in the calculation of proportions and in the determination of the form in which the enormous masses of iron are to be grouped; months are spent in gathering the materials together which are to be given shape in the great vessel and

which are to be cast, turned, planed and forged into the pieces composing the mighty engines and lesser machinery; during months and months the tremendous structure lies motionless upon the ways slowly receiving the massive machinery which is to form the vital apparatus essential to the life action of that powerful and hardly less than living creature. No sign of life or power is seen during this long period of development, and, to the uninstructed observer, it may seem utterly improbable that the dormant mass can ever be more than an inert and useless hulk; yet when the period of preparation is completed and all that is needed for the purposes intended by the designer and the constructor has been brought together and put in place, suitably connected part to part, there comes a time when a change and a movement are perceived. A few insignificant pieces of timber are knocked away and the enormous vessel slowly, and by imperceptible acceleration moves down toward the water, and with continually increasing speed finally rushes into the element which is to be for all its future life its home. A halt and a little delay, and a now fully equipped and self-impelling steamship once more moves. Starting again with slow and hardly visible motion by the exertion of her own unseen but inconceivable power the great ship gradually acquires velocity and we see her later traversing the ocean back and forth over a thousand leagues of water like an enormous shuttle weaving bands that tie closer and closer hitherto separated members of a common race and binding the nations daily into more perfect brotherhood.

So it was with science in the past and it is in the present. Long ages ago in the earliest historic period was her time for slow and unobserved generation and embryonic growth. All through the middle ages signs were not wanting of her existence and gradual development in the changing methods of thought of mankind and in the accumulation of materials to be usefully applied at a later date. At the beginning of the seventeenth century the first great movement began, and then only did the true purpose of all that earlier period of preparation become evident. A century ago, with the introduction of the products of the printing press into the daily life of the world, with the electric telegraph and the introduction of the railroad began the

real progress of science, and we are now seeing but the beginning of her awe-inspiring career. She has taught us to drive ten thousand tons across the seas regardless of wind or waves. She has taught us to send printed messages under the oceans and over the continents, girdling the world with her mysterious wire. She has shown us how to drive the railway train with its hundreds of tons of merchandise and living freight faster than birds can fly. She has helped us give to the people news of every land, gathered in every clime and brought to us by messengers swifter than thought and printed on millions of sheets between the first glowing of the dawn and the rising of the sun. Yet the mission of science has made but the veriest beginning. It still remains to her to perfect and systematize a thousand new industries, and to invent yet unimagined arts. The true mission of science is one that extends far beyond the workshop of its servants; it extends far beyond our ken and beyond the range of our mental grasp and farthest view. The great fact that material prosperity is the fruit of science and that as mankind is given opportunity for meditation and culture the attributes of human character are developed are the best indication of the true mission of science. The enormous advancement of the intellectual side of life must inevitably result in the production of a race of men peculiarly adapted to such environment as science is rapidly producing.

* * *
SCIENTIFIC NEWS.

A triple benzine burner has been invented by F. W. Branson. This lamp is so arranged that any or all lamps may be turned on at pleasure and the flame may be concentrated or spread over a considerable territory.

We hear that the State University is to have a new chemical laboratory. This is a move in the right direction. With the prestige and endowment of the University it should surely afford more encouragement in the study of science. It is to be hoped this will give the "Pharmacutes" better facilities for their work.

The long lost art of the ancients in tempering copper is said to have been discovered. The Tempered Copper Company of Northeast, Pennsylvania, claim that they can supply the trade.

San Diego is to have the largest telescope in the world. It is being polished by the Clark Bros., Cambridge, Mass., and when finished will be forty inches in diameter.

In the May number of *Agricultural Science* we notice an article by A. A. Crozier and P. H. Rolfs ('89) on the crossing of different varieties of corn. The article shows that considerable work was done in investigating the subject, most of the experiments being performed on the college farm.

Among the different uses to which Edison's phonograph has been applied are cultivating the voices of elocutionists and musicians, making talking and crying dolls, and preserving Indian languages. Lately, some of the small villages of Iowa are suggesting that by means of this instrument they get some noted orator, e. g. Chauncey Depew to deliver their Fourth of July oration and procure some local elocutionist to supply the gestures.

Closely following upon the isolation of free fluorine comes the discovery of fluoroform, the analogue of chloroform. It was first produced by the action of silver fluoride upon iodoform and is, under ordinary conditions, a gas.

The chemical department of the experimental station has lately been experimenting on milk preservatives to be used in connection with Prof. Patrick's milk test. They expect to work for the next few months largely upon grasses.

We learn that A. S. Hitchcock ('84), late professor of chemistry at the State University, is now working on the college flora and will soon put his researches into such a form as to be accessible to the students. Mr. Hitchcock was a thorough collector while a student of the college and has since spent a number of summers in completing and perfecting his work. It is anticipated that his labors will be of great value to the student of botany.

Professors Bennett and Smith are experimenting upon the relation which different cattle foods bear to the richness of milk as indicated by the total amount of fat.

ADULTERATION OF FOODS.

It is a remarkable fact that people as a rule care less what they eat than what they wear. When purchasing woolen fabrics we examine them critically, learn the distinctive tests for wool and cotton and blame ourselves if we receive an inferior article for the genuine goods. So it is with silks and laces, wood and coal, but a person may sell dilute sulphuric acid for vinegar without hearing the least word of complaint until the customer concludes that beans are injurious to his health.

Adulteration of foods is carried on to a larger extent than is generally supposed. Almost every article in common demand from the cheapest to the most costly is mixed either with something that will lessen the cost of production or with reagents used in its manufacture. Adulterations are not necessarily harmful. The adulteration of coffee with chicory, jellies with gelatine, and sugar with sand are only wrongful when sold as the pure article and at the same price. But manufacturers generally mark their labels strictly pure and trust the unsuspecting public to disregard their deceit.

In addition to the harmless, though fraudulent adulterations, there are two other classes, deleterious and accidental adulterations. The deleterious adulterations are represented by alum baking powders, analine colored candies, and arsenic complexion creams. Their manufacture and use can not be condemned too strongly. Accidental adulterations may or may not be harmful, but their use is attended with inconvenience to say the least. As a general thing honey is preferred unmixed with pollen of plants, sugar free from insects, and butter without curd.

The most common harmful adulterants are sulphuric acid, analine and arsenic colors. Vinegar, glucose, and cream tartar are extremely liable to contain sulphuric acid; while candies, butter, preserves, and wines are usually colored with poisonous compounds. It is clearly the duty of congress to make laws that will check the manufacture and consumption of adulterated foods. A few of the states have at the present time laws which lessen adulterations to a large extent.

The Massachusetts law upon this subject is said to save the consumers \$75,000 per year. While the enforcement of such laws would

doubtless require a considerable expenditure, it would only be a small fraction of the amount saved the consumer, and the obtaining of pure unadulterated food would add greatly to the morality comfort and health of the people.

* *

EXCHANGE NOTES.

La Bellevue is the smallest of our exchanges, that is, it has the fewest pages, but it contains much more matter of real merit than many a larger paper.

The following from one of our exchanges is a good suggestion. If all who contribute to our college papers signed their names in full, more care would be given to the article and the standard of the productions raised:

We would like to see a change in the college journalism. We can not see any reason why a writer should give us a conundrum to solve which at best we can only guess at. There is no reason for a writer only giving us his initials, for, if he wants to hold himself from the knowledge of readers, he should sign "Anon," but, if he wants to be known, he ought to tell us who he is. Our friends and those for whom we care recognize our initials, and certainly no one would care for a stranger knowing. Readers learn to love the names of writers, and we know that the interest we have in any article is greatly enhanced by only knowing the name of the one who wrote it. No one can afford not to do so small a thing for so great a profit. What is my name? J. B. W. James Butler Waterford, Julius Baldwin Wyatt, and as many more as you can fix up. No, let us not be thus. Let us have names, full names.

The Hesperian, of May 2, is devoted exclusively to the inter-state contest. It gives a very full account with a copy of each oration.

It is estimated that one man in 3,000 in England takes a college course; one in 200 in the United States; one in 614 in Scotland; and one in 213 in Germany.

The *Wesleyan Hatchet* appeared only once in that dress, but as Vol. 1, No. 2, comes out as *The Eccritean*. The change seems to be only in outward covering as the staff is the same and the second number fully equal to the first.

We notice among the officers of the experiment station of the Dakota Agricultural College,

four former students of the I. A. C.—C. J. Cotey, Chas. A. Keffer, Luther Foster and C. A. Carey.

Fourteen of Iowa's county school superintendents are now women. All of these are elected for a term which does not expire until 1892. Four of them are hold-overs from former terms.—*Elevator*.

We receive this month Vol. 1, No. 3, of the *Advance*, which is the *Wesleyan Lance* and *Advocate* combined. It is a good paper and we wish it success.

A well-written paper may be said to resemble a gentle person; it is humorous but not boisterous; newsy, but not gossipy; serious, without becoming tedious; at times enthusiastic, but never to the extent of ranting; it censures evil, but not persons; it endeavors to be just and thoughtful of all, and hurts the feelings of none. It is this that gives dignity to a college paper.—*Ex*.

The *Cornell Breeze* has some interesting reading in it, but as the paper is fully one-half advertisements and these well mixed in with other articles, it is rather difficult to find the solid reading matter of the paper. This may be pleasing to those who advertise, but is rather uninteresting to the most of the readers.

The *F. A. C. Cadet Herald* is a live paper, much interested in the college it represents. If more of our papers gave their readers ideas of the work of their colleges, it might be very interesting to outsiders as well as beneficial to the school. Too many only mention the work the college or any of its professors except to criticize.

The lovers of pure sentiment and moral poetry cannot fail to be interested in the good Whittier. He is now beyond eighty-two and is color-blind and enfeebled by age. He seldom devotes more than half an hour at a time to literary work. He is now much tormented by being sought out as a show by a vulgar and gaping crowd of curiosity seekers. He does not like that kind of popularity, and even directs his barber to burn every hair that falls from his head so that none may be secured in the future as relics.—*Southern University Monthly*.

The *Penn Chronicle* informs us that one of the members of the Penn College faculty will give a few minutes talk once a week on the

most important, interesting and popular topics of the day. We feel that a talk of this kind would be a great help to the majority of the students in colleges. Students are apt to become so occupied in the college work that they lose interest in the outside world and do not, as a rule, devote the time they should to obtaining a knowledge of outside matters. Such a weekly talk would not only keep the students pretty well posted as to the affairs of the world but also keep them so interested that they will read for themselves. While in school they are apt to devote themselves so closely to college exercises that they go home at the end of the college term to find themselves three or four months behind the times and unable to converse about anything except themselves and their own work.

EDITORIAL.

THE ORIGINAL PACKAGE DECISION.

THE recent decision handed down by Chief Justice Fuller of the supreme court of the United States reversing the decision of the state court in the "original package" case of *Keokuk* has given the question of prohibition a new phase; henceforth it will be a national and not a state question. The decision as handed down by the Chief Justice and concurred in by six of his associate judges is fundamentally this: "That congress and congress only is authorized to make laws for the regulation of the inter-state commerce, and hence that all commerce coming under this category is excluded from state regulation unless placed under such regulation by congressional action." Such in substance is the decision, and so it will stand until congress takes such action as will be necessary to vest the state with full authority in the control of the liquor traffic. As it now stands the importation and sale of alcoholic stimulants in original packages from one state to another comes under the category of inter-state commerce and cannot be interfered with by state law. Therefore, since such is the case, prohibition will be taken out of state and put into national politics. Hereafter the friends of the cause will have to make it their business to elect congressman who are friendly to it and who will vote such measures as will put the control of the liquor traffic into the hands of the state.

But whatever the decision may mean as to

prohibition it does not interfere in the least with the closing of the dram shop and the public drinking place, nor with the prohibition of stand-up drinking and treating—all evils in themselves—at which the friends of temperance first directed their crusades. The state is left free to carry out its original purpose of closing the saloon. This original purpose of the prohibitory law did not mean that it should be legally and physically impossible for any person to obtain a glass of beer, or of other liquor, if it did, the decision is a fatal blow to prohibition. But such was not the purpose and intent of the law, and this being the case there is still left much to the friends of temperance for which to be thankful.

Now that the question stands thus, there remains for all true friends of temperance a great work to be done. The fanatical work of trying to force men rather than to educate them to temperance has brought about what the enemies of temperance term their great victory—the recent decision. It is gratifying to know that the work of educating the people to a temperance standard is being pushed by Francis Murphy. His twenty thousand converts in Iowa will rise as one man and testify to the truth that it is wiser to educate a people to morality and temperance than it is to force them to accept morality and temperance. Let the temperance people of Iowa and throughout the United States redouble their efforts; let them remember the lessons of the past and profit by them; let them consider that such men as the celebrated Potts, of Des Moines, and his methods of operation do not promote but retard the just cause; let them take up the work of education and, like Francis Murphy, make converts in the right way, the only way, the humane way. B.

HAZING, A VICE.

EVERY now and then a case comes up that casts a shadow of despondency over the minds of intelligent people, and makes them wonder whether the idea of progress is not simply a farce. Such an effect is wont to be produced when we hear of fresh outbreaks of the hazing mania in leading educational institutions. It is a huge stumbling-block in the way of promoting the cause of higher education, to have the press spreading such reports as that of the recent fray at Ann Arbor. How a body

of students voluntarily collected for the purpose of their own development, working hard to secure that end, and professing any knowledge of the methods through which it is attained, can so far forget themselves and their puposes, is not easily explained. The idea that a spirit either of sport or of malice should be allowed to attain such a degree of supremacy among the minds of men who profess to be trying to elevate the standard of humanity, is not very strong argument in favor of their means of elevation. People look for results in determining the merits of an institution, but they sometimes draw incorrect inferences therefrom. It is an undeniable fact that the value of a college course deteriorates under the influence of such lawless proceedings, just in proportion to the extent to which they are carried. But the deterioration is not, as many students seem to imagine, in the character of the institution itself. It is in the character of the individuals who participate. Other students may be inconvenienced thereby, the reputation of the school may suffer, but it is the hazer himself who is really affected. Open defiance of the principles of reason and justice, pandering to barbarous tastes and impulses, being carried by the current of excitement into direct violations of conscience, are habits that will over-balance the good influences of countless days at the desk or bench. Science, Literature and art will not take the place of character. No character can command the respect of the world when it fails in self-respect; and there is no condition which so soon exhausts self-respect as the predominance of these habits which are always acquired by indulgence in this kind of sport.

The evil is narcotic in its effects. It benumbs the finer sensibilities by excitement, and leads the actor on by degrees until he dare not come out from under its influence and reflect upon his deeds. In the light of reason they are odious even to himself. He has accomplished nothing. The fruit for which he has been striving has turned to ashes on his lips.

We notice in our exchanges various opinions as to what should constitute the editorial in a college paper. Combining, as a college paper must to a greater or less extent, the functions both of a magazine and a newspaper, the question naturally arises as to which element shall gain

ascendency on the editorial page. We can see no objection to the discussion of topics having general political or economic importance. Students *ought* not to become so deeply engrossed in their school work as to exclude an interest in such topics, but is it a matter of fact in our experience that a majority of them *do*, to a great extent. Shall we then assume the role of reformer and attempt to arouse an interest in the live subjects of the time, or devote our space to the discussion of topics which come within the narrow limits of the "college world" and in which our readers are already interested? Perhaps the best solution of the question is reached by a compromise. We have room and time for both. Let the two classes of subject be given equal consideration and the best results will probably be obtained.

The complaints of the Alumni in regard to the lack of matter in THE AURORA which is of interest to them, have usually met the retort that it is the Alumni's own fault. The retort applies with no less force to the students. THE AURORA is the organ of the literary societies; the editors are simply agents for the students in preparing the paper. They expect to do all in their power to represent the students and make the paper a source of entertainment to them. But let it be remembered that their powers are limited, and there is nothing that will broaden these limits except the co-operation of other students. If you want to see the paper made a success, bring in the material that will make it so. Bricks are not made without straw. You can be especially helpful to the local department. It is practically impossible for one individual to know all that transpires in school. When you know an item of local interest, make it your business to see that it reaches the local editor. The other departments, too, are glad to receive contributions from students. Scientific and literary articles are always in demand and a Student's Column will be open for miscellaneous contributions whenever there are such.

Of course these articles are subject to the inspection of the editor under whose department they come, but even if your effort should be consigned to the waste basket like that of many another genius, you will at least be better for the attempt and can feel that you have tried to do your duty toward the college paper.

LOCAL.

Strawberries are in bloom.

Miss Leila Blanchard visited Boone Saturday.

Mrs. Spear recently visited friends at Cedar Falls.

J. T. Stinson spent Sunday, May 11, at his home.

Mr. Howe received a visit from his father recently.

Mr. Ricketts enjoyed a visit from his sister last week.

The Sophomores say they are going to have class rings.

F. E. Davidson was in Des Moines last week on business.

Miss Marsland and Mrs. Jones spent Sunday in Des Moines.

Mr. Kreger spent a few days at home during the middle of May.

The I. A. C. will be represented in the state contest of athletes.

Mr. Moss received a visit from his father during the first of May.

Minnie Roberts received an unexpected visit from her father May 14th.

Mrs. J. R. Lincoln and baby have just returned from a three weeks' visit in Kansas.

Mr. Ballrich has been quite ill during the last three weeks, and is still unable to be out.

Edward Thurleman left college for a week in April to finish up his duties as nursery agent.

Pres. Chamberlain, Prof's Budd and Stanton attended the funeral of Father Clarkson May 9.

The members of the astronomy class are discussing the advantages of "practical astronomy."

We are all going to the World's Fair even if we have to pay Billy ten cents extra for the journey.

Tennis courts literally cover the campus, and the evening recreation hour seems not nearly long enough.

Wanted,—in the Steward's office, a clerk who is in the building by the time the seven o'clock bell ceases to ring.

The King's Daughters contemplate giving a series of receptions, the first to be held on the evening of May 23.

Miss Hannah Giddings, who is teaching in State Centre, visited the "Harrison county" students Saturday and Sunday.

The Savery House furnishes a room free to all college students for the purpose of committee, society or association meetings.

The president announces a change which is heartily welcomed by the students—the "recreation hour" is now an hour and a half.

The recent rains here and in the country around caused the creek near Ames to overflow its banks, thereby creating a new foot-path to Ames.

During the first of May, Miss Alice Mann took a week's vacation from college studies in order to superintend some horticultural work at home.

Col. Lincoln has been appointed to a position on the staff of Governor Boies as chief of engineers and chief signal officer with the rank of colonel.

The question of three hours per week in military drill is being discussed among the members of the battalion, and it seems to meet with approbation.

Which way shall the new chapel face? That is the question. It will be a beautiful building, and should be so situated as to "show off" to the best advantage.

When students go to Boone or Des Moines trade with the men who advertise. Tell them you are from Ames. This will help the manager next year in getting "ads."

We wish to eradicate any erroneous impressions which may exist in the minds of the freshmen, as to the location of the new chapel; it will *not* be erected in McGinty's back yard.

The Clios held their declamation contest Saturday evening, May 17. The judges were Mrs. Chamberlain, Mrs. Stanton and Miss Doolittle. Miss Grace Mills was marked first and Miss Ella Morton second.

The Honorable Trustees are the chief authorities of this institution, but when dinner is ready they "must wait." It will not always be thus. Among other improvements to be made, the dining room will be increased.

The board of trustees at their last meeting appropriated one hundred and fifty dollars with which to purchase hymn books for chapel use. An appropriation of twenty-five dollars was given the athlete association.

Although we have had a very fine winter, spring costumes are tardy in appearing upon our campus. Any professor or other individual who is the happy possessor of such raiment should take initiative at the earliest opportunity.

C. D. Davidson spent Friday and Saturday in Des Moines. He was very successful in securing advertisements for THE AURORA. But in order to get one man to advertise he had to purchase a hat, the dimensions of which are astonishing.

The geology, botany and zoology classes visited Boone and vicinity May 24th under the chaperonage of their respective professors. The science club joined in the expedition, and the amount of knowledge gained by that day's research is incalculable.

Hissing in Chapel may be considered very expressive, but we feel safe in asserting that the better class of students will not indulge in this mode of expressing their feelings. It is very indicative of a crawling nature and sends cold chills along one's spinal column.

The Misses Mills and Roberts gave their Sunday School classes a picnic, May 10th. The rain of the night before spoiled their plans somewhat, yet the dinner in the Clio room and afternoon spent in the woods were thoroughly enjoyed by children and teachers.

Interest in the science club is said to be increasing. About twenty members are enrolled. Very interesting papers, one on the subject of baking powders and their adulterations, one on foul brood and entomogenous fungi and one on the principle of the dynamo, appeared on the program for May 16.

Last Friday evening Miss Pike's private music pupils met as usual, and spent most of the evening upon "Schubert." Mr. Shøemaker and Miss Gaston read selections from his biography, Miss Pike played a serenade, Miss Yeisley played an impromptu, and Miss Justus rendered one of Beethoven's selections.

The green house plants are being set out in the garden and upon the borders of the terrace, thus adding to the attractive features of the

place. The grounds are too beautiful to become deserted for a whole month; yet, when June 16th arrives, we will gladly welcome the vacation and turning our faces homeward, forget Exams, and all else but the pleasant things.

The interstate oratorical contest was held at Lincoln, Nebraska, Iowa being represented by W. H. Lyons. The orations were excellent and the contest a close one. The first prize, seventy-five dollars, was awarded S. W. Naylor of Topeka, Kansas, and the second prize, fifty dollars, was awarded to Mr. Douglass of Illinois. The officers for the following year are: Pres., W. A. Bastin of DePauw University, Indiana; Vice Pres. C. Oggel of the I. A. C.; Sec., L. B. Smith of Beloit college, Wisconsin.

The trustees met the third week in May. Mr. Dunbar was chosen president of the board. Plans for the new building were submitted and those of Joslyn & Taylor of Cedar Rapids were adopted and they were employed by the board as architects. The contracts for this building will be let as soon as possible. The trustees have made arrangements to provide more room for the students; the college is full and the opening of the preparatory department will necessitate more room. Principals and teachers of public schools, seminaries and academies of the state may avail themselves of the summer school of science which will begin in July and last five or six weeks.

Mr. W. H. Parsons, state assistant secretary of the Y. M. C. A., addressed the students Sunday, May 5th, and succeeded in organizing a Y. M. C. A. in this place. Although the general Christian Association of old was doing good work it is thought from the results of this new organization elsewhere that the formation of a Y. M. C. A. and a Y. W. C. A. in this college must promote better work. The Y. M. C. A. opened with sixty members and chose Mr. Norton as president. Forty enlisted in the Y. W. C. A. with Miss Roberts as president. Mr. Parsons is a very earnest laborer in this cause and has surely succeeded in infusing a new spirit into the work of the associations. The college will now be known as it is, and will no longer "the only state institution unrepresented in the Y. M. C. A. and Y. W. C. A. conventions."

Resolutions on the death of Robert McPherson:

WHEREAS, Death has entered our class circle and deprived us of the society of dear to us as a classmate, we render in these resolutions our appreciation of the upright life led by the deceased while in our midst, and our sympathy to those who mourn more bitterly his death because of closer ties.

Resolved, That in the death of Robert McPherson our class has lost one of its valuable members, and while we recognize no less the wisdom of God because of the decease, we mourn for our classmate who has been called early in life to the world beyond.

Resolved, That Providence has cut short a life that promised much on earth, and that during our acquaintance with the deceased he manifested cheerfulness and kindness in thought and deed which are marked characteristics of true manhood.

Resolved, That a copy of these resolutions be sent to the mourning brother who has been a student here in times past, and that a copy be placed in the proper care to secure their insertion in the columns of THE AURORA.

Adopted by the class of '92 May 8, 1890.

F. C. STEWART, Pres.

JESSIE MAXWELL, Sec'y.

BOYS AND GIRLS OF THE PAST.

'78. Ida Twitchell Blochman has spent a portion of the winter in San Francisco, consulting the libraries of that city as an aid in preparing a work on temperance, which is designed for use as a text-book in the public schools of her adopted state.

'80. W. B. Welch has recently met with a sad affliction in the death of his only child, a promising boy of four years.

'85. N. B. Niles visited Ames during the Christmas holidays and took away as his bride Margaret Geddes, youngest daughter of the late Gen. Geddes. Dr. Wynn performed the ceremony which made them man and wife.

'86. E. S. Richman has left Arkansas University and is now Horticulturist of the Utah Experiment Station, Logan City, Utah.

G. W. Wattles, A. U. Quint, J. B. Hungerford, and other citizens of Carroll have started a vinegar and pickle factory at that place.

'88. Charlie Hunt, who was injured in a barbed wire fence nearly a year ago, has recovered sufficiently as to walk without crutches.

'89. John Cooley sends his subscription from Washington Heights. He is with the Horace E. Horton Bridge Co.

The total number of I. A. C. graduates is four hundred and sixty-five.

'90. Geo. Eustis sends his subscription from Des Moines.

'88. Scotty Bradford is cashier in a bank in Marathon, Iowa.

'74. C. D. Boardman is secretary of the State Republican Central Committee.

Rumors are afloat concerning the approaching nuptials of some of our '88 graduates.

'88. Geo. L. Meissner, Lincoln Nebraska, sends a dollar in payment for THE AURORA of 1890.

Judge Macomber delivered the Decoration day address at Ida Grove.

C. M. Rose is Horticulturist for the Experiment Station of South California.

C. A. Keffer is professor of Horticulture, South Dakota Agricultural College.

'72. F. L. Harvey is professor of botany, Maine Agricultural College, and Entomologist of the Experiment Station of Maine.

G. K. Cherrie is chief taxidermist of the National Museum of the Island of Costa Rica.

L. E. Benton is assistant professor of Horticulture in the University of California.

Positions held by I. A. C. men March 1st, in Des Moines: J. K. Macomber, '72, County Attorney; W. McHenry, City Solicitor; Tom Burke, '81, Judge of Police Court; C. F. Saylor, '82, County Superintendent of Schools; Estelle Bebout, '74, City Librarian; Frank Jackson, Secretary of State; M. L. Garrett, Clerk of Police Court; John Whitten, Deputy State Treasurer; Mr. Patrick, '75, Deputy in the Secretary of State's office.

Old Students located in Des Moines: Mrs. Macomber, W. H. McHenry, '81; L. V. Harpel, '87; J. B. Marsh, '82; Mrs. Ione [Weatherby] Marsh, '84; Geo. Govier, '87; Pat Finnigan, '87; Chas. Stearns, '89; Mrs. Jackson, Mr. Stewart, '86; John Shelton, '89

Three of our Alumni are on the Board of Trustees.

'90. Mr. Maclean called upon friends at the

college May 20th. He is employed upon the *Telegraph*, Atlantic, Iowa.

'89. Miss Mame Zimbelman visited at the college from May 8th, to May 12th.

'89. Mr. Platt beamed down upon us May 10th and 11th.

'87. May 14th twenty-three new lawyers were turned loose in Des Moines, among the number, L. V. Harple. THE AURORA's best wishes go with him upon his new career.

'87. M. Reynolds studied at Drake University the past winter and is now practicing veterinary medicine in Quasankqua.

'89. Harry Gossard spent Sunday, May 11th, among college friends.

'86. M. Z. Farwell is an attorney, and also postmaster at Trespiedras, New Mexico.

W. E. Porter visited his sisters at the college a few days while on his way to St. Louis.

'90. Harold J. Holmes has been book-keeper in the Pacific National Bank, Tacoma, Wash., for the past eighteen months, and has fine future prospects. He takes THE AURORA.

R. C. Sayers sends his contribution to THE AURORA from Fairfield, Iowa.

'90. Geo. Bond spent a few days at the college during the last of April.

The alumni and students away from the college expect to see in the columns of THE AURORA much news concerning their college friends. We, also, would like to see the columns well filled, and, as we can not manufacture the material, the *only way* this can be accomplished is for each one to constitute himself a reporter.

Dr. Irving Smith, '72; and Mrs. Sallie [Stalker] Smith, '73, of Charles City, renewed old memories at the college May 20th. They were accompanied by the Rev. Mr. Noble and wife, of the same city.

OPEN LETTERS.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION.

"After considerable observation and reflection I have ventured to call the great work of the Young Men's Christian Association *the* religious movement of the nineteenth century." So speaks Bishop Hendrix, D. D., LL. D. If what he says of the association work in general is true, and we believe it is, we may with even

more emphasis say that the college department of the Y. M. C. A. marks the greatest religious movement in the history of American colleges. The college work had its origin in 1887, at which time Mr. L. D. Wishard, then a student at Princeton college, took up the work of organizing and extending the association in the colleges of the United States and Canada. From the very beginning the work had a rapid growth, and as a result of inter-collegiate correspondence, visitation and college conferences the plan of organization and methods of work have been so developed and systematized that the association seems almost perfect in its adaptation to the needs of our colleges.

Its work has been alike successful in both denominational and state institutions. This is due to the fact that the work is non-sectarian and unites the entire forces of all denominations and of those who recognize the value of christianity as a moral power. This has already been accomplished in 300 of the leading colleges of our own land. The association emphasizes:

1st, The personal responsibility of every member for the life of his associates.

2d, It emphasizes the necessity not only of professing christianity but also living it seven days in the week.

3d, It recognizes and emphasizes the importance of Bible study as necessary to a complete education and to the development of true manhood.

4th, It seeks not only to win men to Christ but also to make them active and intelligent workers for Him.

To put the whole object of the work in one sentence we may say that it is to develop christian gentlemen—*true men*.

Our christian association, as all others, has always done a good work in the college and has grown especially fast during the past two years. The present Freshman class has increased the number of active members of the association greatly, and the upper classes are working with more zeal. As our college and association steadily grow we come to feel that we are not organized in a manner that will accomplish the great work we are intended to do. Under our present form there are not enough members brought into active work. In this, as in all society work, we gain strength in proportion to the amount of work we do.

The plan of organizing the Y. M. and Y. W.

C. A. here instead of our present association has been thought of and discussed from time to time but for good reasons it was thought that we were not ready for the change. Mr. W. M. Parsons, assistant state secretary of the Y. M. C. A., visited the college last month and in a forcible manner called the attention of the students to the great work being done by the Y. M. and Y. W. C. A. all over the United States, and especially their work in colleges. As a result the former Christian Association disbanded their organization and the Y. M. and Y. W. C. A. were formed. These two associations have taken up the work the Christian Association had been doing, and with greater energy are forwarding this the greatest of all undertakings—the preparing of young men and women not only for this life but the life to come.

The Sunday school and prayer meeting are continued much the same as in the past, but each association hold separate mid-week prayer meetings.

We are the eighteenth college of our state to organize these associations, but with a charter membership of one hundred and twenty-five, the good will of students and faculty, and the prayers of all interested we hope and trust that our association will very soon rank well with similar ones of the state—*Contributed*.

MECHANICAL ENGINEERING AT I. A. C.

A school of Mechanical Engineering to meet the wants of the time must be progressive in methods of teaching and to some extent conform the practical work of the students to the most modern practice in the engineering world. For two reasons it must provide for increase of numbers; because such an education is demanded by greater numbers, as the manufacturing world appreciates its value, and more especially because the field is so broad that to give twenty young men a really thorough education requires almost the same outlay for salaries and apparatus as for eighty or a hundred. Although at our college, the bachelor of engineering only, is given, and consequently another year or two of study would naturally be expected for acquiring the full M. E. degree giving at the best eastern schools, yet our graduates are often expected to fill quite as responsible places as theirs.

We are at the disadvantage of being unable

to require as much for entrance, by nearly one year. It is something of a problem, therefore, to fit our graduates for filling the places open for them. Expertness in drawing and a mastery of the principles of mechanics are the first essentials. You are not master of them until you not only understand them but can use them. Only what time is left after getting the principles can we use for giving a knowledge of engineering as it is now practiced.

Our shop work has made great advance in the last two years. For the fundamental work of teaching principles we have a thoroughly systematic course. These are taught by exercises on various tools. This work will soon be made more complete and interesting by having each student apply his knowledge in making some simple machine of his own design. The cost of these articles in power used and time and material will be estimated, and he can compare his own work with that in other shops. To be of most use to him he should plan all the work himself.

This calls at once for drawings and designs on paper.

In the drawing department also great advance has been made, and for teaching principles we shall soon have a thoroughly systematized course. It is difficult to collect apparatus for such a course, as it should include a large assortment of actual working drawings of machinery from large manufacturing establishments, that the student may see the latest and best practice, and such establishments do not readily part with their drawings. Besides this, considerable full sized machinery should be accessible which students can study and sketch from.

The department has just obtained 40 or 50 large drawings of machine parts which will be of great use, and the Dean Pump Company have promised to send one of their pumps with sections of the metal cut away so that the inside working can be studied. No effort will be spared to increase our stock of such machinery and drawings. But as these machines can only be looked at, and not used, no department without a great deal of money, can afford \$200 here and \$300 there, for this purpose.

Fortunately many manufacturers appreciate the truth that it is the best and cheapest advertisement they can make to afford young engi-

neers facilities for studying their product. The largest schools are literally flooded with them, gratis.

The senior class have recently made a complete design for a lathe. The patterns have been made in our wood shop and as soon as castings can be obtained from them the lathe will be finished in our shop. It is hoped that this and other work by the students can be exhibited at the state fair.

One word about electrical engineering. Most students do not reflect that at present our only source of electricity on any large scale, is from the dynamo machine. Now this is a *machine*, and to build one calls for as much knowledge of machinery as of electricity. But when made is worthless without steam or water power. When I applied, once, for a position in a large electric lighting company, the first question asked me was: "What do you know about steam engines?" The best authorities say that a good electrical engineer must have put nine-tenths of his study on machinery, designing steam engines, etc., and the one-tenth on electricity. The increased use of electricity will continue to call for special steam engines and an increased demand for good water wheels. The student that looks ahead far enough, will fit himself to furnish these if he wants a demand for his services by electrical companies five and ten years from now. This is the training our M. E. course is now giving.

C. W. SCRIBNER.

The "Preparatory Course," which will begin next July and continue during the full term, promises a good attendance. The studies to be taught are: Elementary algebra, Eng. Grammar, Physiology, U. S. History, and Military Drill. This will give persons who have had little opportunity to pursue these studies a chance to fit themselves for next year's Freshmen's class. The requirements for admission to this course will be, a good knowledge of the common branches, including complete arithmetic, elementary grammar, orthography, reading and writing. While this is only an experiment in the college, we have no doubt but that, if managed in the right way, it will prove a success and will be continued during the fall term of each year.

P. G.

THE TECHNICON.

Miss Pike has added one more attraction to the Music Department—a Technicon. This is an instrument designed to develop the muscles used in playing, but more especially to give a conscious control of them. This is done by means of adjustable weights and levers. More can be accomplished in fifteen minutes with the technicon than in an hour's practice of finger exercise on the piano. Best of all immediate benefit is derived from its use, especially in the third and fourth fingers, which are naturally weak. In fact the technicon can not be too highly praised. To those not studying music the ceasing of those monotonous finger exercises, is the most pleasing feature.

OTHER COLLEGES.

Michigan University is soon to have a new building for the law department, which will cost \$200,000.

The oldest college dormitory in the United States is that known as South Hadley at Yale, which was erected in 1752.

The youngest college president in the west is President Gates, of Iowa College, at Grinnell.

It is estimated that the number of American colleges is increasing at the rate of fifteen per year.

The contributions to American colleges during 1889, amounted to about \$4,000,000.

There are fourteen American colleges without presidents.

One of the professors of Yale college is a Japanese, who began his education at a mission school in Japan.

Of 360 colleges in the country 271 are supported by religious denominations.

It is estimated that American colleges are so endowed that on the average students get their education at one-tenth actual cost.

Of the members of the fifty-first congress, over one half have received college education.

Toronto was visited by a very destructive fire February 14th. The loss is estimated at \$1,000,000.

Mrs. Cleveland has been re-elected president of the Wellesley College Association.

It has been shown by statistics that the United States ranks first in the number of educational institutions and students who attend

them. There are in this country 360 universities, 2400 professors, and 694,000 students.

The botanical laboratory of the Michigan Agricultural College was recently burned. The loss is estimated at \$15,000.

There is to be a new Methodist College, the University of the Northwest, located at Sioux City, Iowa.

The fund of Harvard college now exceeds \$7,000,000, and has increased \$1,000,000 the last year.

It has been hinted that the reason so many of our colleges are throwing open their doors to women is that in this age of foot ball, base ball and general athletics, somebody is needed for the faculty to teach.—*Ex.*

A memorial is soon to be erected by Williams College to the venerable Mark Hopkins, so many years its president. It is to be a recitation building, costing about \$105,000.

The college founded at Santiago, Chili, by the missionaries aided by governmental appropriation, is the finest school of its class in the world.

The first game of foot ball in America was played in 1867, between Harvard and Yale.

BIOGRAPHICAL.

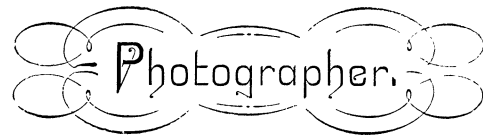
Students and professors are migratory animals, but the janitor and the plumber are fixtures of the institution. To the visiting alumni the old I. A. C. would present a cold, unfeeling welcome if they were not entertained, for a few moments at least, by "Old John" and the lightning maker, Tripp. "Old John made his first advent here as a plasterer when the M. B. was being finished. For twenty-two years he has been upon the list of college employes, having held the various positions of "furnace frer," when the building was heated (?) by eleven hot air furnaces in the basement; gasmaker, when the building was lighted by gas made of resin, and afterwards by naphtha gas; pumpman, night-guard and janitor.

Mr. Tripp took the chair of college plumber and sanitary engineer the same year that John began his work. Tripp is a practical engineer, and the manner in which he frisks among the network of pipes in the chemical laboratory handling his pipe-wrench as a juggler would play with a baton is perfectly surprising.

Both of these men have grown old in the service of the institution, and the I. A. C. has no greater admirers than they.

The Freshmen, by "fooling with the lights," sometimes give Mr. Tripp trouble in running the smaller dynamo, and the Sophs, by their never ceasing capers, give Old John "more pangs and fears than wars or women have."

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